



Configure Licensing with HyperFlex Data Platform

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Smart Licensing and HyperFlex

Overview

Cisco Smart Software Licensing (Smart Licensing) is an intelligent software license management system that automates time-consuming, manual licensing tasks, such as procuring, deploying, and managing licenses across your entire organization. It provides visibility into your license ownership and consumption so you know what you own and how you are using it.

Smart Licensing introduces company-wide license pooling. Server-based licenses, or smart licenses, are not node-locked to devices so they can be used on any compatible device owned by your company. Using virtual accounts to organize licenses and product instances for your company into logical entities, for example, by business unit, product type, or IT group, makes it easy to transfer devices and licenses across virtual accounts.

The Smart Licensing feature integrates with Cisco HyperFlex and is automatically enabled as soon as you create an HX storage cluster. For your HX storage cluster to start reporting license consumption, you must register it with Cisco Smart Software Manager (SSM) through your Cisco Smart Account. A Smart Account is a cloud-based repository that provides full visibility and access control to Cisco software licenses and product instances across your company. Registration is valid for one year.

Registration enables HyperFlex to be identified to a Smart Account and allows license usage to be reported to Cisco Smart Software Manager or Smart Software Manager satellite. After registration, HyperFlex reports license usage to Cisco Smart Software Manager or Smart Software Manager satellite with the current license status. See the following License Status section for details.



Note You will need to open ports 80 and 443 to `tools.cisco.com` for all HyperFlex management IPs in order for this to work.

After you register your HX storage cluster, communication messages are signed by a certificate used to identify HyperFlex to Cisco Smart Software Manager or Smart Software Manager satellite. HyperFlex automatically sends the following requests:

- A renew registration request every six months. In case the automatic registration renewal does not occur, use the `stcli license renew id` command to manually renew.
- A renew authorization request every 30 days is required by Smart Licensing. In case the automatic authorization renewal does not occur, use the `stcli license renew auth` command to manually renew. You need to manually renew Smart Licensing authorization only if connectivity is not available when renewal is attempted or your renewal time is outside of your connectivity window.
- A renew authorization request is also sent to Cisco Smart Software Manager or Smart Software Manager satellite whenever license consumption changes. This authorization is valid for 90 days. If HyperFlex doesn't contact Cisco Smart Software Manager or Smart Software Manager satellite for 90 days to renew its authorization, licenses consumed by HyperFlex are reclaimed and put back in the pool.

License Status

Registration Status	Description	Verify Status	System Functionality
Evaluation Mode	Smart Licensing is enabled but your HX storage cluster is not registered to Cisco Smart Software Manager or Smart Software Manager satellite and in a 90-day evaluation period.	To verify the status or check the remaining time left in the evaluation period, run <code>#stcli license show all</code> . Result: Mode = Eval & Remaining period (Number of Days:Hours:Minutes)	No impact on features or functionality.
Evaluation Expired	Smart Licensing is enabled but your HX storage cluster is not registered to Cisco Smart Software Manager or Smart Software Manager satellite. Your license is in the Initial Unidentified state and not considered out of compliance.	To verify the status, run <code>#stcli license show all</code> . Result: Mode = Evaluation Expired	No impact on features or functionality. <ul style="list-style-type: none"> • Generates syslog message. • Generates an <i>Evaluation Expired</i> alarm in the HX Connect UI.
In Compliance	Smart Licensing is enabled and your HX storage cluster is registered to Cisco Smart Software Manager or Smart Software Manager satellite. You are consuming <i>less</i> licenses than you own.	—	—

Registration Status	Description	Verify Status	System Functionality
<p>Out of Compliance</p>	<p>You are consuming <i>more</i> licenses than you own.</p> <p>Important Cisco will never interfere with or shutdown a customer network when a device is out of compliance.</p> <ul style="list-style-type: none"> • Out of Compliance at Initial Registration state—Smart Licensing is enabled and your HX storage cluster is registered to Cisco Smart Software Manager or Smart Software Manager Satellite but after initial registration you do not have enough licenses. • Out of Compliance after Initial state or after being in-compliance for some period— Smart Licensing is enabled and your HX storage cluster is registered to Cisco Smart Software Manager or Smart Software Manager Satellite but you no longer have enough licenses. 	<p>To verify the status, run <code>#stcli license show all</code>.</p> <p>Result: Mode = Out of Compliance</p>	<p>No impact on features or functionality.</p> <ul style="list-style-type: none"> • Generates syslog message. • Generates an <i>Out of Compliance</i> alarm in the HX Connect UI at cluster level. <p>Note The Out of Compliance state breaches the intellectual property EULA and the license must be purchased/renewed in order to continue receiving support.</p>
<p>Authorization Expired</p>	<p>Smart Licensing is enabled and your HX storage cluster is registered to Cisco Smart Software Manager or Smart Software Manager satellite but has not communicated to Cisco Smart Software Manager or Smart Software Manager satellite for more than 90 days.</p>	<p>To verify the status, run <code>#stcli license show status</code>.</p> <p>Result: Mode = Authorization Expired</p>	<p>No impact on features or functionality.</p> <ul style="list-style-type: none"> • Generates syslog message. • No event or alarm on HX Connect. • Cisco Smart Software Manager portal displays flags and notifications.

Registration Status	Description	Verify Status	System Functionality
Export Control Flag Set to "Not Allowed"	Smart Licensing is enabled and your HX storage cluster is registered to Cisco Smart Software Manager or Smart Software Manager satellite but cannot register to use Export Control.	—	Behavior is mostly controlled by the Cisco Smart Software Manager server. Note This status is applicable only if the HX storage cluster contains restricted functionality.
ID Certificate Expired	Smart Licensing is enabled and your HX storage cluster is registered to Cisco Smart Software Manager or Smart Software Manager satellite but your ID certificate has not renewed for more than six months. Your license is in the Subsequent Unidentified state and is considered out of compliance.	To verify the status, run <code>#stcli license show status</code> . Result: Mode: ID Certificate Expired To clear all conditions and return to <i>In Compliance status</i> , run the following command: <code>#stcli license renew <auth>/<id></code>	<ul style="list-style-type: none"> Generates syslog message. No event or alarm on HX Connect. Cisco Smart Software Manager portal displays flags and notifications.

License Management for Connected Environments

To manage your licenses for connected environments, proceed as follows:

Registering a Cluster with Smart Software Licensing through a Controller VM

This section covers the alternate method for registering a cluster with Smart Software Licensing.

Step 1 Log in to a controller VM.

Step 2 Confirm that your HX storage cluster is in Smart Licensing mode.

```
# stcli license show status
```

Feedback should show **Smart Licensing is ENABLED, Status: UNREGISTERED**, and the amount of time left during the 90-day evaluation period (in days, hours, minutes, and seconds). The Smart Licensing evaluation period starts when the HX storage cluster begins using the licensing feature and is not renewable. When the evaluation period expires, the Smart Agent sends a notification.

Step 3 Register your HX storage cluster, where *idtoken-string* is the **New ID Token** from Cisco Smart Software Manager or Smart Software Manager satellite.

```
# stcli license register --idtoken idtoken-string
```

Step 4 Confirm that your HX storage cluster is registered.

```
# stcli license show summary
```

Alternatively, you can confirm that your HX storage cluster is registered in **Cisco Smart Software Manager > Inventory > Product Instances**.

Example:

```
root@SpringpathController80IWLHJOKW:~# stcli license show summary
```

```
Smart Licensing is ENABLED
```

```
Registration:
```

```
Status: REGISTERED
Smart Account: Corp X HyperFlex License
Virtual Account: west-region
Last Renewal Attempt: None
Next Renewal Attempt: Aug 1 17:47:06 2017 PDT
```

```
License Authorization:
```

```
Status: AUTHORIZED
Last Communication Attempt: SUCCEEDED
Next Communication Attempt: Mar 4 16:47:11 2017 PST
```

```
License Usage:
```

```
License                               Entitlement Tag
Count  Status
```

```
-----
Cisco Vendor String XYZ
regid.2016-11.com.cisco.HX-SP-DP-S001,1.0_1c06ca12-18f2-47bd-bcea-518ab1fd4520 3      InCompliance
```

Deregistering a Cluster from Smart Licensing

You deregister an HX storage cluster when you want to release the licenses back into the pool to be used by another HX storage cluster or to remove Cisco Smart Software Manager registration; for example, if you want to decommission a cluster. After the HX storage cluster is deregistered, HyperFlex runs in evaluation mode, if any evaluation period remains. If not, HyperFlex is in evaluation expired status. Deregistering a cluster that is in an expired evaluation state, does not impact the cluster production data.

The Smart Agent contacts the licensing cloud and unregisters itself. All Smart Licensing entitlements and certificates on the platform are removed. All certificates and registration information on the trusted store are removed. The Smart Agent can unregister even if it is unable to communicate with Cisco to deregister. If you need to use Smart Licensing again, reregister your HX storage cluster. See [Registering a Cluster with Smart Software Licensing through a Controller VM, on page 4](#).

Before you begin

- Verify that your HX storage cluster is registered with Smart Licensing using the following command:

```
# stcli license show status
```

-
- Step 1** Log in to a controller VM.
- Step 2** Deregister your HX storage cluster from Smart Licensing.
- ```
stcli license deregister
```
- Step 3** Confirm that your HX storage cluster is deregistered.
- ```
# stcli license show summary
```
-

Renewing Smart Licensing Authorization

Before you begin

- Verify that your HX storage cluster is registered with Smart Licensing using the following command:

```
# stcli license show status
```

-
- Step 1** Log in to a controller VM.
- Step 2** Renew the Smart Licensing authorization using the following commands:
- ```
stcli license renew id
stcli license renew auth
```
- Step 3** Confirm that the HX storage cluster is renewed and authorized.
- ```
# stcli license show summary
```
-